Machine Learning Assignment 2

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GitHub link: https://github.com/AkhilaBoddu/ML-Assignment-2.git

Question1

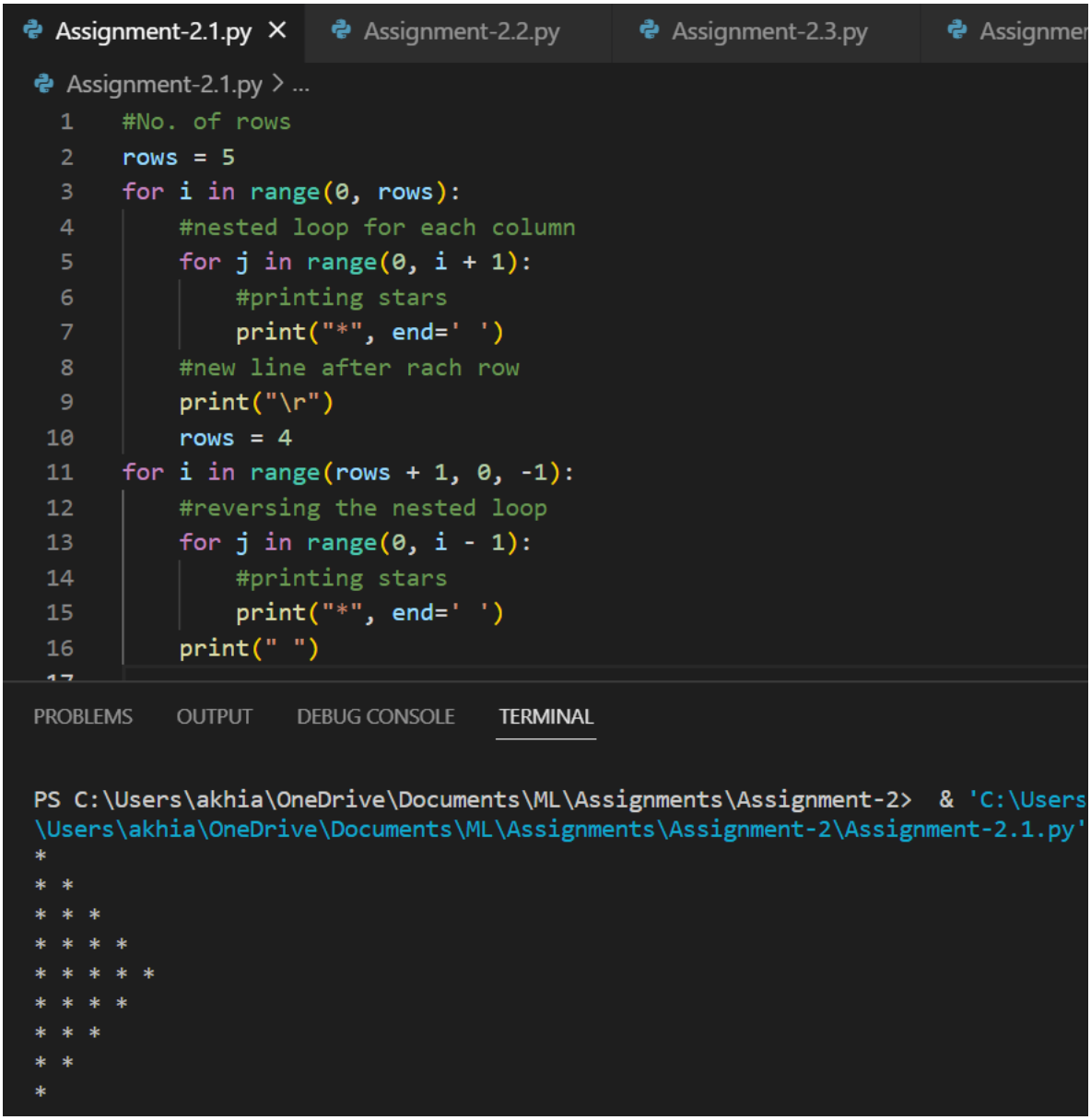
Use a python code to display the following star pattern using the for loop

Source Code:

```
# No. of rows
rows = 5
for i in range(0, rows):
    # Nested loop for each column
    for j in range(0, i + 1):
        # Printing stars
        print("*", end=' ')
    # New line after each row
    print("\r")
    rows = 4
for i in range(rows + 1, 0, -1):
    # Reversing the nested loop
    for j in range(0, i - 1):
        # Printing stars
        print("*", end=' ')
    print(" ")
```

Description:

In the above code Firstly I'm taking 5 rows and by using the nested loop for each and every column I'm adding stars to it. starting from the row 1 to row 5 in an increasing order and after each row I'm adding a new line. Then reversing the pattern by reversing the nested loop, starting from row 4 in a decreasing order to row 1.



Question2

Use looping to output the elements from a provided list present at odd indexes.

my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

Source Code:

my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

#printing the above list

print("The list is :", my_list)

print("The elements in odd positions are : ")

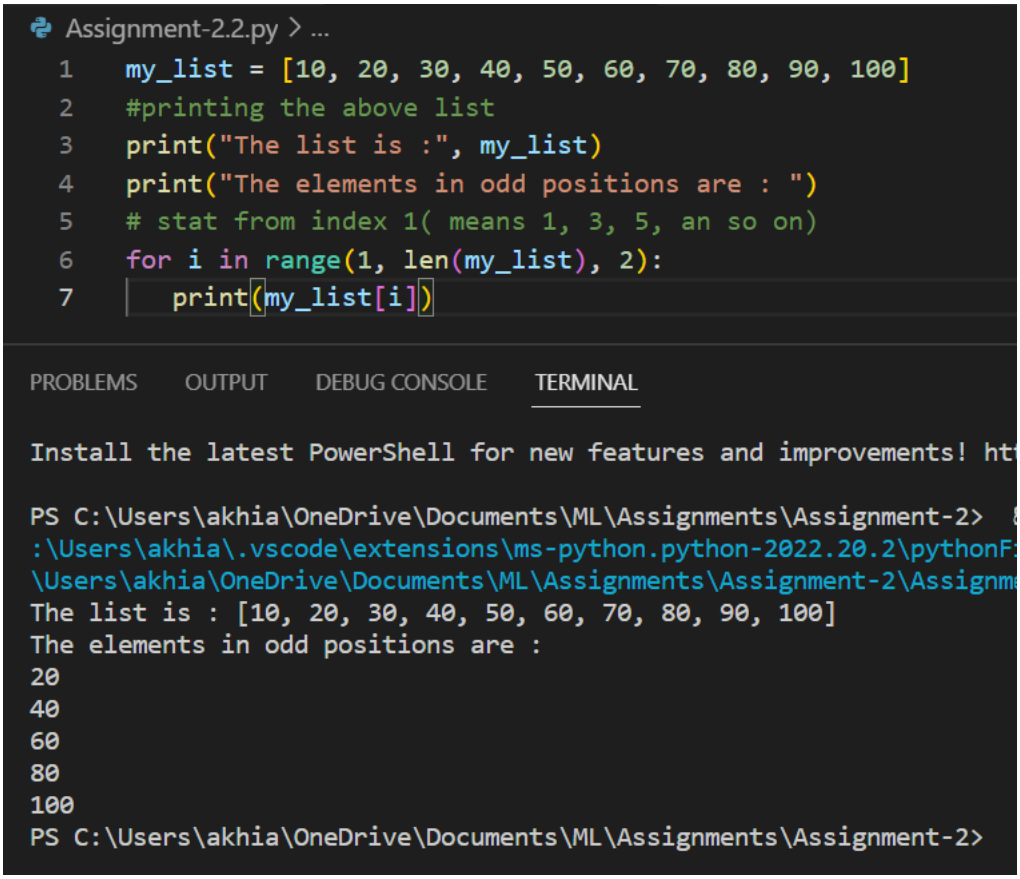
 # Using loop start from index 1(i.e., 1, 3, 5, 7, 9)

for i in range(1, len(my_list), 2):

  print(my_list[i])

Description:

In the above source code, First I'm just taking the random values. Using the for loop starting from the index 0. I'm picking the odd positions and printing the values (i.e., 20, 40, 60, 80, 100).



Question3

Write a code that appends the type of elements from a given list.

Input

x = [23, 'Python', 23.98]

Expected output

[23, 'Python', 23.98]

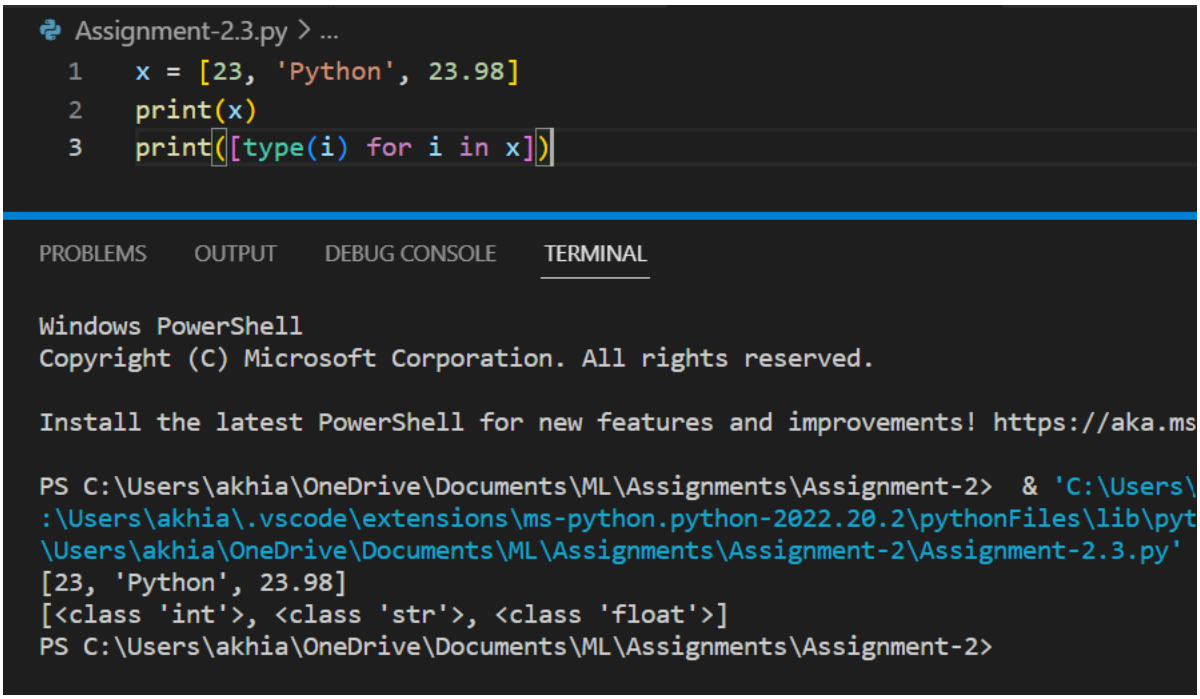
[<class 'int'>, <class 'str'>, <class 'float'>]

Source Code:

```
x = [23, 'Python', 23.98]

# Printing x list

print(x)

# Printing all the type of the elements from the given x list

print([type(i) for i in x])
```

Description:

In the above source code, First I'm taking different datatype of elements and storing them in x list and printing them. Using type() function to define the element datatype and printing the datatype.



Question4

Write a function that takes a list and returns a new list with unique items of the first list.

Sample List: [1,2,3,3,3,3,4,5]

Unique List: [1, 2, 3, 4, 5]

Source Code:

```
# Defining Unique_list()
```

```
def unique_list(l):
 x = []
 for a in l:
# If a not present in x then append a to x
   if a not in x:
     x.append(a)
# Return x elements
 return x
# Printing Sample list
sample_list=[1,2,3,3,3,3,4,5]
print("Sample List :", sample_list)
# Printing Unique list of values from Sample list
print("Unique List :",unique_list(sample_list))
```

Description:

In the above source code, First I'm defining unique_list() which will be used later then I'm taking some random values as a Sample list. Using for loop from a in I and checking if a is not in x, if so then appending a to x. Then using the unique_list() which I have defined at beginning to print the unique values from the sample list.

Assignment-2.4.py > unique_list

```python
def unique_list(l):
    x = []
    for a in l:
        if a not in x:
            x.append(a)
    return x
sample_list=[1,2,3,3,3,3,4,5]
print("Sample List :", sample_list)
print("Unique List :",unique_list(sample_list))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.m

PS C:\Users\akhia\OneDrive\Documents\ML\Assignments\Assignment-2>  & 'C:\Users
:\Users\akhia\.vscode\extensions\ms-python.python-2022.20.2\pythonFiles\lib\py
\Users\akhia\OneDrive\Documents\ML\Assignments\Assignment-2\Assignment-2.4.py'
Sample List : [1, 2, 3, 3, 3, 3, 4, 5]
Unique List : [1, 2, 3, 4, 5]
PS C:\Users\akhia\OneDrive\Documents\ML\Assignments\Assignment-2>
```

Question5

Write a function that accepts a string and calculate the number of upper-case letters and lower-case letters.

Input String: 'The quick Brow Fox'

Expected Output:

No. of Upper-case characters: 3

No. of Lower-case Characters: 12

Source Code:

 # Defining String_test()

```
def string_test(a):
    b={"UPPER_CASE":0, "LOWER_CASE":0}
    for c in a:
```

```
# If c is Uppercase then count
        if c.isupper():
          b["UPPER_CASE"]+=1
# Else if c is Lowercase then count otherwise pass
        elif c.islower():
          b["LOWER_CASE"]+=1
        else:
          pass
# Print the input string
    print ("Input String : ", a)
# Print the count of Uppercase
    print ("No. of Upper-case characters : ", b["UPPER_CASE"])
# Print the count of lowercase
    print ("No. of Lower-case Characters : ", b["LOWER_CASE"])
string_test('The quick Brow Fox')
```

Description:

In the above source code, First I'm defining string_test() which will be used later. Using for loop from c in a and checking if c is uppercase or lowercase otherwise pass. Then using the string_test() which I have defined at beginning to print count of uppercase and lowercase from the given string.

Assignment-2.5.py > ...

```python
def string_test(a):
    b={"UPPER_CASE":0, "LOWER_CASE":0}
    for c in a:
        if c.isupper():
            b["UPPER_CASE"]+=1
        elif c.islower():
            b["LOWER_CASE"]+=1
        else:
            pass
    print ("Input String : ", a)
    print ("No. of Upper-case characters : ", b["UPPER_CASE"])
    print ("No. of Lower-case Characters : ", b["LOWER_CASE"])

string_test('The quick Brow Fox')
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
\Users\akhia\OneDrive\Documents\ML\Assignments\Assignment-2\Assignment-2.4.py'
Sample List : [1, 2, 3, 3, 3, 3, 4, 5]
Unique List : [1, 2, 3, 4, 5]
PS C:\Users\akhia\OneDrive\Documents\ML\Assignments\Assignment-2>
```